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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,318	12/28/2006	Michitsugu Mori	292878US2PCT	9802
22850	7590	07/09/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PATEL, PUNAM	
			ART UNIT	PAPER NUMBER
			2855	
			NOTIFICATION DATE	DELIVERY MODE
			07/09/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/584,318	<b>Applicant(s)</b> MORI ET AL.	
	<b>Examiner</b> PUNAM PATEL	<b>Art Unit</b> 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori II (M. Mori, Y. Takeda, T. Taishi, N. Furuichi, M. Aritomi, H. Kikura. "Development of a novel flow metering system using ultrasonic velocity profile measurement." *Experiments in Fluids*. Vol. 32. (2002) pp 153-160).**

With respect to Claims 4 and 6, Mori II disclose a method for measuring a flow rate of a fluid in a pipe using an ultrasonic flowmeter and a computer (Fig. 3) comprising the steps of:

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outputting a flow velocity distribution graph displaying the flow velocity in two axes of positions in the inner diameter direction of the fluid pipe relating to the measuring line and fluid velocities corresponding to the inner diameter direction (Fig. 9);

identifying the inner wall position with respect to the axis in the inner diameter direction on the outputted graph (Figs. 4 & 9, wherein the inflection points can be seen at ~0mm and ~253mm & pg. 157, col. 2, wherein the actual pipe diameter is 254mm); and

calculating the flow rate of the fluid by an integral operation based on the identified inner wall position (pg. 154, Equation 2). However, Mori II fail to explicitly teach performing the step of calculating the exact inner wall position by calculating the inflection point from the fluid velocity distribution graph.

It is notoriously well known and within the skill of the artisan to utilize mathematics, specifically Calculus, to calculate the exact position of an inflection point on a graph, thus identifying the exact wall position on the profile.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to calculate the exact value of the inflection point of Mori II, by utilizing Calculus, as it is notoriously well known in the art, in order to provide an accurate flow rate of the fluid.

### ***Response to Arguments***

Applicant's arguments with respect to claim 4 and 6 have been considered but are moot in view of the new ground of rejection.

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Mori II discloses the nexus between wall positions and inflection points of a flow velocity distribution. Furthermore, Mori II discloses identifying the nexus point and eliminating data points beyond the wall position in eliminate irrelevant data points (Fig. 5).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aritomi teaches it is known in the art to identify pipe wall position in flow velocity distribution profiles (pg. 918, col. 2). The definition of "point of inflection" teaches that the position of the point on a graph can be calculated through differentiation. The definition of calculus teaches that the exact minimum value of a function can be found through derivation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PUNAM PATEL whose telephone number is (571)272-6794. The examiner can normally be reached on Monday to Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lisa Caputo can be reached on (571) 272-2388. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harshad Patel/  
Primary Examiner, Art Unit 2855

/PP/  
07/02/2009